REPORT RESUMES

ED 018 532 VT 000 103

DEVELOPING PROGRAMS IN AGRICULTURAL OCCUPATIONS.
BY- BINKLEY, HAROLD
KENTUCKY UNIV., LEXINGTON, DEPT. OF AGR. EDUC.
PUB DATE NOV 66
EDRS PRICE MF-$0.25 HC-$1.88 45P.

DESCRIPTORS- *VOCATIONAL AGRICULTURE, *OFF FARM AGRICULTURAL OCCUPATIONS, HIGH SCHOOLS, PROGRAM PLANNING, GUIDELINES, *PROGRAM DEVELOPMENT, *PROGRAM GUIDES,

THE PURPOSE OF THIS DOCUMENT IS TO ASSIST EDUCATORS IN PLANNING AND DEVELOPING PILOT PROGRAMS FOR TRAINING WORKERS IN THE AGRICULTURAL OCCUPATIONS. IT INCLUDES (1) THE PHILOSOPHY AND CRITERIA FOR DEVELOPING PILOT PROGRAMS IN AGRICULTURAL EDUCATION, (2) A DESCRIPTION OF SUCH A PROGRAM AT REIDLAND HIGH SCHOOL, (3) A DISCUSSION OF LEGISLATION AFFECTING VOCATIONAL EDUCATION, THE PATTERN OF INSTRUCTION AND THE LEARNING PROCESS, AND SUPERVISED PRACTICE IN AGRICULTURE, (4) 13 POINTS CONCERNING IMPLEMENTING NEW PROGRAMS, (5) DIAGRAMS OF FOUR CONCEPTS OF HIGH SCHOOL PROGRAMS PROPOSED THROUGHOUT THE COUNTRY, (6) THREE UNITS OF INSTRUCTION WHICH MIGHT BE USED IN DIFFERENT SENIOR-YEAR COURSES OF STUDY IN AGRICULTURAL OCCUPATIONS--THE SALES AND SERVICE AREA OF VOCATIONAL HORTICULTURE, AGRICULTURAL SUPPLY BUSINESSES, AND AGRICULTURAL MECHANICS, (7) 21 GUIDELINES FOR DEVELOPING PROGRAMS, AND (8) A TIMETABLE FOR SETTING UP AND STARTING A PROGRAM IN AGRICULTURAL OCCUPATIONS. (WB)

ED018532

DEVELOPING PROGRAMS IN AGRICULTURAL OCCUPATIONS

COLLEGE OF EDUCATION
UNIVERSITY OF KENTUCKY

1966

VT 00103

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

DEVELOPING PROGRAMS IN AGRICULTURAL OCCUPATIONS

Philosophy for pilot programs and suggestions for updating, implementing, and guidelines for developing programs in agricultural occupations.

Prepared by
Harold Binkley
for the Kentucky Staff in Agricultural Education

Under contract with:

Division of Adult and Vocational Education
U.S. Office of Education

For Distribution
at
Demonstration Center
Reidland High School
Paducah, Kentucky

Department of Agricultural Education
College of Education
University of Kentucky
Lexington, Kentucky

November 1966
(Revised)

PREFACE

Vocational education in agriculture will be different tomorrow from what it is today. It will prepare high-school boys, young men, and adults for many agricultural occupations that are present and emerging as well as for the complex vocations in farming.

As the leadership in agricultural education moves to develop new and expanding programs under the 1963 Vocational Education Act, the basic philosophy of vocational education in agriculture must be kept in mind. The underlying philosophy of vocational agriculture is responsible for the high respect that the public has for the program today.

Before starting pilot programs in agricultural occupations in Kentucky the staff in agricultural education developed a philosophy and criteria for initiating pilot programs to train workers in agricultural occupations. The statement of philosophy is included in this booklet. The program in agricultural occupations of the department of vocational agriculture at Reidland High School grew out of this philosophy.

It is exceedingly important to plan new programs in vocational agriculture on the basis of a sound philosophy. And, administrative support is imperative if the programs are to develop and expand as they should. It is hoped that the suggestions in this publication dealing with philosophy and procedures in updating and implementing programs in agricultural occupations will be helpful to school people throughout the country. The guidelines and the timetable suggested should be helpful in setting up and starting programs.

W. C. MONTGOMERY, Director
Pilot Programs in Agricultural
Occupations in Kentucky

TABLE OF CONTENTS

Page

Philosophy and Criteria for Pilot Programs for Training Workers in Agricultural Occupations 5
  Philosophy 5
  Criteria 6

The Program in Agricultural Occupations at Reidland High School 8
  The Situation 8
  A Program in Agricultural Occupations 8

Updating Vocational Agriculture to Meet Present and Future Needs 13
  Vocational Agriculture, 1917 14
  Vocational Agriculture in Recent Years 14
  The Vocational Education Act of 1963 14
  The Vocational Pattern of Instruction 16
  Classroom Instruction and the Learning Process 16
  Supervised Practice in Agriculture 20
  Plan for Success 22

Implementing New Programs in Vocational Agriculture 23
  Program A 30
  Program B 30
  Program C 31
  Program D 31
  Agricultural-Supply Businesses–Sales and Service 32
  Vocational Horticulture–Sales and Service 32
  Agricultural Mechanics–Sales and Service 32
  Program in Vocational Agriculture 34

Guidelines in Developing Programs in Agricultural Occupations 36

A Timetable for Setting Up and Starting a Program in Agricultural Occupations 44

I

PHILOSOPHY AND CRITERIA FOR PILOT PROGRAMS FOR TRAINING WORKERS IN AGRICULTURAL OCCUPATIONS

Philosophy

The agricultural occupations in this title are the occupations related to farming in that important abilities needed in farming are used in them. If the abilities needed in farming are not acquired before beginning training for a specific agricultural occupation, developing them becomes a part of such training.

Training these workers *is agricultural education* only because the training is related to farming. The occupations are "farm-related occupations." The basis for curriculum planning is the concept of *relatedness of abilities.* The core in the instruction is the abilities needed in farming—how they may be used in other agricultural occupations. Farming abilities are the starting point.

For each farming ability selected to include in the course of study, the application of the ability to the occupation(s) other than farming must be identified and become a part of the instructional program.

The abilities in the related occupation which do not overlap with farming may require training outside of agriculture, in the broad field of vocational education. Thus, they may call for *cooperative* vocational programs. In the instructional program, the teacher of vocational agriculture should deal with the abilities in farming (or that overlap with farming). The other abilities may need to be handled by people in fields such as distributive education, industrial education, and business education.

The variety of technology in agricultural occupations varies from the simple and specific—on the level of knowing a good insecticide for cutworms, for example—to highly abstract and complex abilities such as applying herbicides. Thus, courses of study will be of different lengths and for people of different levels of ability.

Guidance (occupational and educational) in the school and in the department of vocational agriculture must be functional.

The training in agricultural occupations must equip (or better equip) the student with salable skills. Skills are not salable if jobs are not available. The training must satisfy the basic requirements of vocational education.

Criteria

1. A maximum of four high-school programs and not more than two post-high-school programs shall be started in the state during the pilot period. Pilot period: January 15, 1965–June 30, 1965.
2. The programs shall be located where there are sufficient numbers of people interested in such training.
3. A high-school program may be set up only in a multiple-teacher department.
4. School administrators will be in on developing the local pilot program.
5. There must be class instruction and supervision of the participating experience that is related to the class instruction. The supervision will be provided by the teacher of the course and the employers of the students while they are in training. Training situations must be available.
6. Only a carefully worked out course which will meet the needs of people in an agricultural occupation or that will secure the learnings that are identified as needed in more than one occupation will be accepted. The aim of the course and the length of the program will be determined in advance. There will be a clear statement as to what the course will lead to, and careful consideration will be given to the participating experiences in which the students will engage.
7. There shall be a memorandum of understanding with the employer regarding the work experience to be provided each student. Memorandums of understanding as to time schedules of the teacher and the students shall be developed with the principal and other school administrators.
8. A survey will be made to identify the abilities around which the course will be developed.
9. The employment opportunities must be carefully considered.
10. No course shall be approved which starts below the junior year; if only one high-school year is offered, it shall be the senior year.
11. The advice of the guidance counselor will be sought in identifying the students to be trained for agricultural occupations.
12. The teacher shall be a graduate in agriculture, experienced in teaching, and certified to teach. He shall be cooperative and an enthusiastic student of the job. He should have a sound and functional knowledge of agriculture, believe in vocational agriculture, and possess organizational and supervisory ability.

13. The teachers in the pilot programs will take an orientation course. One supervisor and one teacher trainer will also take the course.
14. The teacher will be responsible to the local school principal (or director of an area vocational school) and will be under the supervision of the local supervisor of instruction and the state supervisor of agricultural education responsible for pilot programs.
15. The teacher shall make periodic reports (perhaps monthly) and other reports as the state supervisor of the program may deem to be needed.
16. Responsibility for directing and supervising the pilot programs in the state will be lodged in one person. He will be responsible for setting up the programs, supervising them, and evaluating them.
17. One teacher trainer will be designated to work with these programs on things pertaining to teacher training.
18. Individual folders will be kept on each student. Some things needed in the folder are:
    - Personal information record
    - School record
    - Test scores
    - Aptitude test
    - Follow-up, etc.
19. The proficiency of the students will be determined at the beginning and at the end of the program.
20. An advisory committee made up of persons who have a distinct interest in the success of this training program shall be *used*.

II

THE PROGRAM IN AGRICULTURAL OCCUPATIONS AT REIDLAND HIGH SCHOOL

The department of vocational agriculture at Reidland High School completed a pilot program in agricultural occupations on June 30, 1965. The program was conducted over eighteen months, starting in January, 1964. It dealt with training 12-grade students for "job entry" in agricultural-supply businesses—sales and service.

The Situation

The Reidland School District, for the past several years, has become more industrialized; farms have become smaller; and a number of farmers have gone to work in industry. Many of the farmers working in industry continue to live on and operate their small farms.

The enrollment in vocational agriculture dropped to 36 students in a high school of approximately 900. This was to a large extent due to the decrease in opportunities to become established in farming. However, the opportunities for farming programs for students on the farms where the fathers worked in industry remained good. In many cases the sons could operate the whole farm. But the prospects for getting established in farming with a sizeable operation a few years after completing high school were very limited.

At the same time this decrease in enrollment in vocational agriculture at Reidland was taking place, the metropolitan area around Paducah (12 miles from Reidland) was serving an ever increasing number of people in agriculture—in farming and other phases of agriculture. The agricultural-supply stores in Paducah serve western Kentucky, western Tennessee, and southern Illinois.

During this same period of time many people—parents, students, school people, and the public thought of agriculture and farming as being the same. Therefore, they did not see that as farming decreased in the area, agriculture other than farming was on the increase.

A Program in Agricultural Occupations

In December, 1963, the department of vocational agriculture at Reidland was selected to conduct a pilot program in agricultural occupations. The teacher, Mr. Clayton Riley, began to explain to the public what agriculture included in the area and that agriculture was more than farming. Mr. Riley along with the members of his FFA chapter put on TV programs, chapel programs, radio programs, and programs for civic clubs. In addition, several articles were prepared for the local newspapers.

This was an all-out effort to inform the public and to gain suport for the program in agricultural occupations which was to start in January, 1964.

As a basis for selecting the department at Reidland to conduct a pilot program, the following steps were taken by Mr. Riley:

1. The agricultural businesses in the area were surveyed to determine the need for such a program and to develop interest on the part of the agricultural businessmen for the program.
2. The number of boys who desired such training and whose parents would cooperate in the program was determined.
3. A tentative selection of training stations was made.
4. An understanding of, interest in, and support for such a program on the part of school administrators were developed.

After the department was selected for a pilot program, Mr. Riley attended a one-week orientation course to prepare himself for setting up and conducting the program. The orientation course was conducted at the University of Kentucky under the direction of Dr. Harold Binkley. The course included such areas as:

–Philosophy and criteria for pilot programs
–Selecting and developing training stations
–Organizing and using advisory groups
–Selecting students
–Determining units of instruction to include in course of study
–Organizing a course of study

After returning to Reidland, Mr. Riley worked with his superintendent and principal in selecting a ten-man advisory committee. The McCracken County Board of Education asked the men to serve on the committee. The men who were asked to serve were a representative cross-section of the agricultural interests of the area. Membership on the committee included the following:

President of Farm Bureau
The farm director of a local TV station
A representative of the local employment service
Service manager of the REA

Owner of a seed store
Owner of a nursery
Owner of a feed store and hatchery
Manager of a farm co-op store
Two farmers

The advisory committee helped the teacher with such matters as:

- Developing public relations for the program
- Setting standards for selection of boys
- Deciding what things to be included in the course of study
- Determining wages and hours for student work
- Determining the key things involved in employer-employee relations

The committee recommended: 1) a beginning wage of a $1.00 per hour for the supervised work experience, 2) that blocks of work of less than 3 hours not be set up, and 3) that the boys selected to take the training have a good attitude, be honest, dependable, and neat and tidy in appearance.

A meeting of the parents of the prospective students was held at which time the following responsibilities were discussed and agreed upon:

1. Parents were to be responsible for providing the necessary transportation for their sons to and from the training stations.
2. Boys would receive $1.00 per hour for their supervised work experience. Emphasis was to be placed on training as the primary concern.
3. The teacher of agriculture would decide where the boys would work and when, and would judge the personal appearance.

The teacher of agriculture followed this meeting of parents with a meeting of the store owners—the employer-cooperators. At this time the owners decided what days of the week and what hours of the day they desired their student employees to work. Also, the duties of the boys as employees were stated. It was made clear to the employees that the teacher was concerned with the boys' learning as many phases of the business, through actual experience, as possible, and that the students should not be considered by the employers as cheap labor. The desires of the employers as to days and work hours presented a few problems—some employers desired boys to work in the mornings, others in the afternoons, and others on Saturdays and Sundays. This problem was solved quite well the second year by scheduling the agricultural occupations class from 11:00 a.m. to 12:00 noon and by pre-registration of junior students in April for the coming year.

On an annual basis, the details of developing an understanding on the part of prospective students (juniors), their parents, and the employer-cooperators should be accomplished in April for the year starting in September. This will prevent many problems from emerging after school starts in the fall.

A survey of competencies needed in agricultural-supply stores was conducted by the fifteen supervisors and teacher trainers in agricultural education in the state. The information secured along with personal contact with local stores served as a basis for setting up these units of instruction in the course of study: 1) agricultural occupations, 2) orientation to the training program, 3) human relations and personality traits, 4) salesmanship and selling, 5) store skills, with emphasis on use of telephone, adding machine, cash register, scales, sales-ticket box, taking inventory, assembling small equipment, and packaging materials, 6) agricultural mathematics, 7) organization of distributive businesses, 8) merchandising seeds, 9) merchandising feeds, 10) merchandising fertilizers, and 11) merchandising agricultural chemicals.

Classroom instruction.—A modified problem-solving procedure was used. Problems dealt with were practical and realistic in that they were the kind that the boys would encounter in their work experience in the agricultural-supply stores. On each visit to the stores the teacher constantly checked with the owners and managers on areas and problems which they thought should receive special emphasis in the instructional programs at school. In the rear of the classroom a small store was set up and stocked with samples of items found in the agricultural-supply stores. The store was used as a teaching device in which the boys did "role playing" by making sales, filling orders, and making out sales tickets—one boy serving as the customer and another as the sales clerk. This proved to be stimulating and practical in that it gave each boy an opportunity to use the technical information learned in class and to practice the store skills.

During "role playing" a tape recorder was used to tape the conversation. This was replayed and used in evaluating the performance of the student clerk. Demonstrations and "role playing" were conducted for practice in: 1) approaching the customer, 2) determining his need, 3) suggestive selling, 4) closing the sale, 5) using charts to determine fertilizer and insecticide needs, 6) preparing merchandise displays, 7) taking inventories, and 8) using the telephone, adding machine, cash register, scales, and in making out sales tickets.

Early in the class instruction Mr. Riley spent considerable time in preparing his boys for job interviews. This involved specific class instruction followed by practice in calling on the telephone a fellow classmate (in the classroom) and making an appointment for an interview and then being interviewed. This provided boys with the necessary experience to build the confidence needed for an actual interview.

Supervision.—At the start, Mr. Riley visited each store two or three times a week and talked with the employers as to the progress the boys were making in their work experience, including their dress, work habits, and attitude. The boys were not disturbed in their work. However, the teacher observed their performance and made notes for individual counseling and class use. After all boys had started to work, the first part of each class period on Mondays was used to discuss individual and common problems encountered the week before and to arrive at decisions on how to handle them when they re-occurred.

Evaluation.—Each employer evaluated his student employee(s) three times during the period of employment. The first evaluation came after some 20 hours of work experience, the second after 100 hours, and the third after 200 hours. A check-list form was used in making the evaluations. The teacher used the same form in making his evaluation of student performances.

A year later, of the 20 boys who participated in the program during the 18 months, eight were enrolled in college studying agriculture, seven were employed in agricultural-supply stores, two were doing custom work for farmers, two were in the armed services, and one was enrolled in an area vocational school.

The enrollment in vocational agriculture at Reidland increased from 36 students in 1963 to 108 students in September, 1965. In the fall of 1966 there were three teachers of agriculture in the department with 14 senior boys enrolled in the agricultural occupations course. The image of agriculture at Reidland and in the area school serves has changed.

III

UPDATING VOCATIONAL AGRICULTURE TO MEET PRESENT AND FUTURE NEEDS

The basic philosophy of vocational education in agriculture should be kept clearly in mind in updating vocational agriculture to meet the needs of people.

The 1963 Vocational Education Act amended the Smith-Hughes and George-Barden Acts to permit Federal funds to be used in agricultural training programs for occupations in which knowledge and skills in farming are used. These occupations are commonly known as farm-related occupations. The present program of vocational agriculture has been effective in providing training in farming. It has also been effective in providing instruction for those who enter farm-related occupations.

Unless those who have cast their lot with vocational agriculture do some clear thinking and recommitting of themselves, much of the gain of nearly half a century in vocational agriculture may be lost. The basic philosophy of vocational agriculture is sound. It has been largely responsible for the success of the programs since the start. The need for farmer training is increasing. Likewise, there is an increased need for training in farming for those who are to enter other agricultural occupations.

The main business of vocational education in agriculture is to provide training in farming. For years this has been the chief aim of vocational agriculture. The 1963 Act recognized this fact. Basically, vocational education in agriculture is training in farming. It is for all those who can use the training. Such things as forestry, beautification of grounds and lawns, and growing plants under cover have long been included as vocational agriculture. Also teachers of agriculture have long taught the opportunities in agricultural occupations in the broad field of agriculture. This will need more emphasis in the future.

Until specific training in agricultural occupations is needed in separate classes, training in productive agriculture (farming) for high-school boys should not be changed because of it. Changes should not be made too suddenly nor without adequate research. Ordinarily any shift to specific agricultural occupations should not be made before the senior year in high school.

Supervised practice in farming for persons training to enter farming is still a fundamental concept. The 1963 Act did not change this fact. Boys or young men in a separate class training for occupations related to farming should have a participating-experience program in line with the related occupations for which they are in training and the instruction they are getting.

A look at the aim of vocational agriculture as stated in 1917, followed by changes in it in recent years (by general agreement) and a look at the essential characteristics of the program of instruction in agriculture under the 1963 Vocational Education Act are essential to projecting future programs.

Vocational Agriculture, 1917

The Smith-Hughes Act (1917) provided Federal funds for the education of persons "who have entered upon or are preparing to enter upon the work of the farm." The aim was to train present and prospective farmers for proficiency in farming.

Vocational Agriculture in Recent Years

The 1917 aim of vocational agriculture has changed over the years, by general agreement. Vocational agriculture in recent years has not been considered as leading only to the farm. It has led to many occupations in which proficiency in farming makes a significant contribution. Agriculture is more inclusive than farming. In recent years the primary aim of vocational agriculture has been to train for proficiency in farming persons who can benefit from such proficiency.

The Vocational Education Act of 1963

The program of agricultural education under the 1963 Act includes:

Dealing with practical agricultural problems and using subject matter and learning experience necessary in the production and marketing of plants or animals or their products.

a. Directed or supervised practice in agriculture on a farm for persons who are engaged in or preparing for farming.

b. Practical field, laboratory, or cooperative work experience to assure soundness and quality of instruction for those training for other occupations involving knowledge and skills in agricultural subjects.

Kentucky and other states have many capable boys taking vocational agriculture who will not and should not, for one reason or another, attempt to become established in farming or ranching. Likewise, there are many farm boys who are not taking vocational agriculture, who should, because they, their parents, school people, and others think that the training leads only to farming or ranching.

In many states there are two to three times as many jobs in specialized agricultural occupations as there are in farming, and the number is increasing. New York found 3,841 of these workers in only 16 school districts; Utah found 5,774 in two counties; there were 4,692 workers in 11 Mississippi counties; and 14,905 in 17 Pennsylvania counties. In 1959 Kentucky had 150,000 farmers. There were approximately 128,000 people working in businesses that serviced and sold supplies to farmers, businesses that processed agricultural products, and firms that wholesaled farm products—an almost one-to-one ratio. Add to this the people in ornamental horticulture—also agriculture—the ratio exceeded one to one.

The farmers of tomorrow need to be well trained. Likewise, those who are to serve in other agricultural occupations need to be well trained. The job is big, complex, and challenging.

Thus, the important question: how shall vocational agriculture move to meet the present and future needs?—how shall vocational agriculture move to solve the big, complex, and challenging problem?

The statement of essential characteristics of instruction under the 1963 Act gives the chief guidelines for updating programs. A careful study of the statement should give clear guidance.

There is no question as to the need for updating vocational agriculture—no question as to the need for clear concepts and objectives. Updating is a fundamental job and must be done well. In the light of "too numerous demands" now and emerging, there will be a tendency to overlook the basic and fundamental things in a sound vocational program in agriculture. The people in vocational agriculture need to strengthen and make more effective the on-going program which is basically training in farming at the high-school level and for young farmers and adult farmers. To disregard this training and place all emphasis on new programs would "scuttle the boat." At the same time, vocational agriculture cannot neglect the responsibility of developing new programs which will have as their purpose training high-school boys, young men, and adults in agricultural occupations other than farming.

There is a philosophy and there are several fundamental concepts which the leaders in vocational agriculture should keep in mind in updating vocational agriculture to meet present and future needs. The philosophy and concepts apply to these two aspects:

–Improving present or on-going programs in vocational agriculture
–Developing new programs in vocational agriculture

The Vocational Pattern of Instruction

The pattern of instruction in vocational agriculture is class instruction and directed or supervised practice in the agriculture dealt with in class. This must not be forgotten in updating programs in vocational agriculture. Pressure will be brought to bear by school administrators, other teachers, and lay people to place less emphasis on the directed or supervised practice in the agriculture to be learned. The leadership in vocational agriculture must be alert and must "hold the ground" else it will lose the respect of the public for the quality of the program it has had over the years. Vocational agriculture has accepted the challenge of getting theory and practice experience together. This is one of the greatest challenges in the future. If theory and practice are not experienced together, they will not be learned together. Theory that is not associated with the practice in learning is not likely to be learned in a functional manner; it is not likely to increase one's ability in doing.

Now a look at some basic concepts pertaining to the two major aspects of the pattern of teaching: class instruction and supervision of the practice.

Classroom Instruction and the Learning Process

What are the basic concepts that underlie effective class instruction? Effective class instruction presupposes an understanding by the teacher of how learning takes place. How learning takes place is a basic concept for the teacher.

1. *Teaching implies a contemplated learning product.*–One cannot teach, strictly speaking, unless he knows what learnings he is attempting to secure. The lack of clear and valid teaching objectives is probably more responsible for poor teaching than any other single factor. Determining the teaching objectives is the most fundamental of all the processes involved in education. Unless the teacher knows what he is trying to teach, he cannot judge learning as a result of the teaching. Method is meaningless except as governed by forecast of a result desired.

A teaching objective represents a change to be brought about in the behavior of the learners. It is an intended learning to be secured. Grasping these facts will make for effective instruction. There is a vast difference between the teacher's having as his objective the development of the ability to establish a field of alfalfa, to service a farm tractor, or to be an effective sales person in an agricultural-supply store and merely having his students read certain material.

The leaders in agricultural education will need to wrestle constantly with what the teaching objectives shall be as they move to update vocational agriculture. This will be a more difficult task in the future as they move to expand programs to train boys, young men, and adults in agricultural occupations. Research at the local, regional, and state level will be needed in order to determine what these objectives should be.

2. *Effective class instruction calls for a good course of study.*—Some people apparently do not believe that they need a course of study; they are not convinced that they need to know where they are going or how they will get there. Nothing is accomplished by talking about method in teaching unless the teacher knows what he is attempting to teach. At the end of a lesson there is no use of asking a visitor, "How did I do?" unless the teacher and the visitor know what the teacher was trying to do.

A ship follows a course. In doing so, the captain expects to reach the port to which he starts, and all passengers with him. Likewise, the teacher should have a course. A course of study is designed to meet the needs of a carefully differentiated group of students. Only those should be on the ship who are going to its port. Sometimes the course needs to be changed. When there is need to follow a different course, the teacher should change it, but he should have a course. A good teacher does not resist change. He expects it; anticipates it. Even truth changes. The earth was once "flat," and the sun used "to set." Change in truth makes some people quite unhappy.

Good courses of study will be needed in the many areas of agricultural occupations and they will be more difficult for the teacher to develop.

3. *In effective class instruction, the teacher has the soundest possible basis for the agriculture he teaches.*—Research in agriculture and related fields, which before completion often includes trials under practical conditions, is the foundation of agricultural progress. Men who lack respect for research and authoritative opinion (often based on research) should not teach agriculture. Such men will cause their students to have the same undesirable attitudes, and they are almost sure to spend most of their time in teaching the *dying less fit*, the very thing that they should avoid teaching. An important function of teaching is to speed up the evolutionary process and lessen the lag between the time that practices are proved and tested and the time they become generally used. This alone will do much to update

vocational agriculture. This is exceedingly important in preparing young men and adults for agricultural occupations.

4. *Much of the effective class instruction must be done in connection with a problematic situation.*—Most vocations consist very much of solving problems. Problem solving is an active process. Thinking is engaged in. Thinking on the part of students is present in good teaching.

A random collection of problematic situations will not enable the teacher to succeed with problem solving in teaching. The use of unrelated and disconnected problems can lead only to confusion and lack of understanding of what should be learned. The teacher must master the use of problems in teaching; he must be able to adapt problem solving to the group he teaches. This he can do if he has mastered the concepts of problem solving, but not until he has. Problem solving is central and fundamental in training for agricultural occupations.

5. *Learning is the process by which one, from his own activity, becomes changed in behavior.*—One learns from his own activity, from what *he* does. Each student, or other persons, must do his own learning, as no one can engage in an activity for him. Learnings cannot be imparted or given to another. One cannot bequeath learning in his will. Neither can a teacher at any time give learning to his students in any form. He may give them marbles but not learning. The learner learns through the activities he engages in. Activity is essential to learning.

Learning is the process by which one, from his own activity, becomes changed in behavior. Learning results in a change in behavior. One has not learned if he behaves just as he did before. If one has learned to recognize a legume, his behavior on seeing a legume is different from what it was. If one has learned to greet a customer with a feeling of interest in him, his feeling in this respect is different from what it was. Learning is always manifested as change in performance.

Basic to effective teaching is an understanding of what teaching is.

6. *Teaching is nothing more nor less than directing or guiding the activities of the learners so as to result in their becoming changed in behavior.*—No change in behavior of the learners, no teaching. Only to the extent that the teacher can influence the activities of the learners can he teach.

It is rather easy to define good teaching. Good teaching is so directing the activities of the learners as to result in the largest amounts of the most desirable intended learnings and the smallest amounts of undersirable learnings.

Effective vocational class instruction cannot be divorced from the practice by the students, most of which will take place outside of class, on a farm or in an agricultural-supply business or agency.

7. *Effective class instruction in vocational agriculture implies previous selection of students.*—Vocational education in agriculture assumes that at least a tentative choice of an agricultural vocation has been made by the students; that they elect the vocational course on the basis of intelligent decisions. Students should elect the course in the light of knowledge and experiences. They should have the capacity to profit from the course, and the necessary facilities should be available to them for engaging in the practice. Necessary facilities are discussed later, under supervised practice.

Vocational training must be selective of capacity, both before the training and as the training progresses. Not all learners are capable of profiting by the experiences designed for them in courses set up in accordance with other sound criteria. Care will need to be exercised in selecting students for training in agricultural occupations.

8. *Effective class instruction calls for constant evaluation of the learning that takes place as a result of teaching.*—Teaching can be evaluated only by evaluating the learning that takes place as a result of teaching. A teacher cannot intelligently continue or formulate his teaching objectives and plan his teaching procedures without evaluating the learning secured. Learning represents changes in behavior.

Evaluation is an integral part of good teaching. Teaching consists very largely of evaluating the learning of the students and directing their activities so as to carry forward the learning to meet the needs revealed by the evaluation.

The people in agricultural education will see more evaluation in the future. Evaluation is, and will become more clearly recognized and organized as an integral part of the educational process. It is a requirement under the 1963 Act. It will be difficult to do. However, to plan and evaluate carefully will do much to upgrade programs in vocational agriculture.

9. *Effective class instruction is human.*—The students are human beings, and the teacher should "act human."

Effective class instruction is human, the teacher is personally interested in his students. Students want teachers who are interested in them. That's what everybody wants, somebody interested in him.

Good human relations is becoming increasingly important in the business and social world of which agriculture is a vital part. Teachers of agriculture, through being human, can do much to develop good human relations in their students.

Supervised Practice in Agriculture

According to the pattern of instruction for vocational education in agriculture in the Organic Act (1917) and the 1963 Vocational Act, there must be directed or supervised practice.

1. *What is learned is what is practiced.*—By practice is meant performance or some number of performances. This is perhaps the most abused and most misunderstood principle of learning. While practice or use seems to bring a change in performance because it permits other learning factors to operate, these factors operate only in the practice. Practice is an essential condition to learning. Practice does not refer to mere repetition of the act. Mere repetition is unproductive for learning. To repeat the act, literally, would be to do it exactly as it was done before—with the same speed, same lack of expertness, and same everything else. This, by definition, would not produce learning. Learning implies a *change* in behavior.

Practice, of course, is not limited to manipulative practice. There is mental use; attitudes or feelings are used. The ideals to which one reacts are a part of the practice.

What students learn is what they *do*. One often hears that "practice makes perfect" and that "one learns to do by doing." These are half truths. Practice or doing does not necessarily improve quality of performance. The wrong practice tends to get the wrong learnings. One may practice an error as truly as something else. Ordinarily one does not correct his error by repeating it. Hence the necessity for guidance in learning. It behooves the teacher to know what is being practiced, and to get practice of that which is to be learned. In order for the teacher to teach, he must get the learner to *do* what is to be learned. The learner can be taught only what he can be caused to *do*. The reactions that are learned are the reactions that are practiced. If the better way is not practiced, the better way will not be learned.

There is no question but that practice in the tasks to be learned will be more difficult in the future. Practice is still a must in preparing students for farming. It is a must in preparing students for agricultural occupations other than farming. There can be no adequate training in agricultural occupations that does not have its foundation in participation in the tasks for which the abilities are needed. Exceedingly important in vocations is the "ability to do."

2. *Vocational education is expensive.*—Learning to do in a vocation is usually expensive, much more expensive than general education from the standpoint of equipment, teaching time, and supervision. It is much more expensive per student than making an attempt to have the students possess a common body of knowledge through recitation, lecture, and information tests, where the number of students per teacher is large.

Always a considerable part of the learning to do in a vocation must take place in *an actual vocational setting for the individual.* The learners must have positive and first-hand contact with the realities of doing experience. It will take more teacher time in the future to develop good training situations on farms and in agricultural businesses. Not only will it take more time to select and develop good training situations, it will take more time to supervise the students.

School administrators and faculty members need to become aware of the fact that vocational education is expensive, and to understand why. This will be largely a responsibility of the teacher. It may not be an easy task.

3. *The need for supervising the practice.*—Efforts to secure vocational learning in agriculture must not be limited to the classroom. The learners must have positive and first-hand contact with the realities of doing experience. If the experiences are to produce the most education, they must be carefully supervised. Farming programs or other occupational experience in agriculture, from the standpoint of teachers, may not be good unless they are adequately supervised. Adequate supervision is a characteristic of a good training situation, be it in farming or a specialized agricultural occupation.

The practice of students in learning a vocation—regardless of age or of occupation—needs to be supervised, for three reasons:

—To be sure the students get practice
—To be sure that they practice the correct
—To be sure they are aware of their successes and errors

It is not enough that students have good farming programs or other good training situations. The teachers must know what practice is needed, and must supervise it. Again, this may be more difficult in the agricultural occupations that are not farming.

4. *Selecting and developing training stations.*—As teachers think on updating vocational agriculture, they must give attention to selecting and developing training stations which will include home farms, other farms where boys may be placed for farm experience, and agricultural businesses and agencies.

Training stations must be selected on the basis of their potential for training. There should be reasonable assurance that the operator will provide the experiences desired for the students. A second step, that of developing training stations which at first might be called only acceptable, into excellent ones. This development will depend primarily upon one factor: that of a clear understanding of his role as instructor and supervisor. When these understandings are developed, there will be cooperation.

5. *Developing understanding.*—Developing understanding is a *necessity*—teachers cannot update their programs of vocational agriculture by themselves. They must take time and carefully plan to develop a thorough understanding of the total program of vocational agriculture. Who needs to have such an understanding? Perhaps, first of all are the parents of present and prospective students, followed by the students themselves, school administrators, other school people, and lay people in the agricultural businesses and agencies. All of these people must be clear on what the program of vocational agriculture is, how the program is set up, how it is to be carried out, the place of supervised occupational experience, and why supervised practice is a necessary part of vocational education.

Plan for Success

The leaders in agricultural education must carefully plan for updating the program. This will take hard, deliberate, pains-taking effort. During the planning mental moves will be made and checked. If found faculty they will be eliminated so that when the final plans are carried out few errors will be made overtly.

Success is not possible without careful planning. The leadership in agricultural education must be concerned with success from the standpoint of the student, the teacher, the parents, the school, the cooperators, and the public at large.

IV

IMPLEMENTING NEW PROGRAMS IN VOCATIONAL AGRICULTURE

No suggestion is made or implied that other forms of agricultural education should be abandoned or slighted in order to provide this new form. The other types of agricultural education are also important and underdeveloped. The need for training youth and adults in many agricultural occupations is big and complex. The number of workers in agricultural occupations (not farming) with which vocational agriculture is concerned is two or three times the number of farmers and is increasing.

There are workers at many levels requiring varying kinds of preparation. In most of these occupations there are managers, supervisors, technical workers, salesmen, service men, clerical workers, skilled workers, semi-skilled workers, and unskilled workers. There are several types of each. In-service as well as pre-service education is needed, and the number requiring in-service education is larger than the number requiring pre-service education. Training programs should be started in high school and should continue through area vocational schools, community (or junior) colleges, four-year colleges, or other post-high schools.

The number of students needing training for any one level of an occupation or any cluster of occupations is too small to provide specialized training in most high schools. Programs introducing specialized training can, however, be offered in many high schools. Usually, teachers of agriculture cannot offer these programs without help from others. Frequently, they will require help from other vocational teachers; teachers of mathematics, science, and communications; and persons from agricultural business and industry.

In offering new programs in vocational agriculture, teachers will become involved with a different set of people than they have been working with—people in business, industry, and government. They will encounter organizations and institutions they have been bypassing such as labor unions, trade associations, and manufacturer's associations. There is excitement and satisfaction in conquering a whole new world. Vocational education in agriculture is off on a great new venture.

At the high-school level agricultural education cannot expect to train technicians—this is, for the most part, post-high school. In high school vocational agriculture should be concerned with students' having "success experiences" that are of a high quality. If students can develop in high school a "pattern of success" they are likely to succeed after completing high school. In high school the goal should be to prepare students for "job entry"—to enter a job with enough "know how" to advance in the vocation. In most cases these young men will need additional in-service training on a part-time basis or to attend a specialized or technical school if they are to further develop the competencies needed in many of the complex agricultural occupations.

There follows a discussion of 12 points which have to do with implementing new programs in vocational agriculture.

1. *Anticipated benefits from good programs.*—The hurdles in establishing vocational programs in agriculture for specialized agricultural occupations are many. Here are a few developments we may expect to take place.

Schools will provide training for people now largely unserved by specialized vocational education. Many of these people have aptitudes for these occupations. Employers, now often searching almost frantically for competent workers, will have a supply available to them. The entire agricultural industry will be strengthened by providing competent workers to serve the farmers' varied needs and by attracting into the big field of agriculture persons of ability who might otherwise be lost to it.

Training costs to business and industry employing workers in these fields will be reduced as the public institutions make their contributions. High-school programs in agriculture can be reorganized to provide programs appealing to students with specialized interests in agricultural businesses and industries.

The cooperation of various vocational educational services in preparing these workers will lead to other forms of needed cooperation. A whole school system can become involved in preparing for these occupations with due credit given to the contributions of the elementary schools and the high schools as well as to the area schools and colleges which add "the finishing touches."

If vocational agriculture can prepare high-school boys in the junior and senior year for successful "job entry" into agricultural occupations or can cause boys to discover and have a true interest in an agricultural occupation which will cause them to pursue further training at the technical or professional level, it will have made a big contribution to the individuals and to society at large. And, it will have done its job well.

2. *Developing policy for education in agricultural occupations.*—Ideally, a local or area school will have a general policy which will encourage the development of education in agricultural occupations and provide guidelines for their development. Unfortunately, most educational institutions do not have such a policy. Basic policy has to be revised or new policies developed. To proceed without adequate official policy that is understood by all who are affected by it may be fatal to a new and promising program. The Center for Research and Leadership Development in Vocational and Technical Education at Ohio State University is developing a bulletin entitled Policy and Administrative Decisions in Introducing Vocational and Technical Education in Agriculture for Off-farm Occupations. This publication will cover such policy issues as the policy-making process, clientele, purposes, evaluation, staffing, planning programs and procedures, organization and administration, finance, facilities, research and development, public information, and relationships. Leaders in vocational education in agriculture will want to secure a copy.

3. *Planning programs and procedures.*—Once there is a governing policy, programs and procedures can be planned in keeping with it. The publications developed by the Center spell out suggested programs and procedures. Many persons may help develop them. Teachers of agriculture, teachers of other vocational subjects, and teachers of academic subjects may be involved with curriculum directors and principals in shaping programs. "Involvement of people" in planning programs and procedures is the best way to develop a thorough understanding of the program. Understanding, in turn, insures enthusiastic support of them.

Administrators should approve procedures in selecting, recruiting, and scheduling students; establish policies governing student behavior, transportation, purchases, and many other matters of school routine. The procedures must be clear, agreed upon, known to all affected, and should be observed scrupulously.

4. *Using advisory committees.*—Almost everyone who has had a part in starting specialized programs in agricultural occupations knows the necessity of using advisory committees. Many of these committees are misused. An advisory committee is not a substitute for a board of education; a board of education should not delegate any of its policy-making functions to such a committee. Neither is it a curriculum-making body; no professional educator should allow a committee to take over his professional responsibilities. Such a committee is properly a lay committee that consults with and recommends to a

governing board regarding policy and works with the professional staff of a school in ways in which the staff is willing to work with it. A board or a professional staff should never be obligated to do what an advisory committee recommends.

The committee should be representative of the public as well as of employers and employees. A word of caution: The advisory committee should be carefully oriented in terms of what the school is setting out to do in providing training in agricultural occupations, what the pattern of instruction will be, and what standards are to be adhered to, before it is asked for advice. This will keep the advice it gives within the "ball park."

Advisory committees can be helpful in many ways. They can:

—Indicate the kinds of training needed
—Enlist support in a community or area
—Assist in recruiting students and placing graduates
—React to curriculum proposals
—Recommend working conditions and types of experience to provide students
—Recommend placement procedures for occupational experience
—Recommend wage scales in consultation with labor people
—Reflect public reactions to programs offered

Not all advisory committee members need to come from a school's attendance area. Employers and directors of area schools in other areas or regions may be included especially where definite migration patterns (for future schooling or employment) are established or can be established.

5. *Providing adequate funds, facilities, and teacher time.*—Education for agricultural occupations is not cheap education. The costs will be high because classes are typically small; equipment will be expensive; teachers must be well paid since they must be competent enough to hold responsible positions in the industries and businesses for which they are providing training; and expenditures for operation, library, and visual aids will be high.

The temptation to use substandard, cramped facilities and discarded equipment; to reduce teaching time below the requirement; and to omit expenditures for adequate teaching aids will be strong in launching these programs. It is possible to *influence public perception* of the importance of a program by the buildings and the other facilities provided.

Providing adequate teacher time to do the job is a must. The teacher must have time to study his community and larger area adequately to determine the needs of the program to set up his course of study, to develop the necessary understandings by parents and cooperators, to develop training stations, to make his day-to-day preparation for teaching, to give the necessary supervision, and to do the many other things associated with launching a new program.

6. *Involving general educators.*—Essential contributions to these new programs should be made by persons other than vocational educators. Employers in most agricultural occupations included in the studies reported have often ranked general competencies in such areas as personality, ability to work with people, honesty and integrity, personal appearance, work habits, and communicative skills high among the chief requirements for the jobs they have to offer. Teachers of English, speech, mathematics, science, and other related subjects should be an integral part of a comprehensive staff required in the operation of new training programs. The leaders in vocational agriculture must cause these people to feel they are making a definite contribution to the success of the programs.

7. *Involving other vocational services.*—The contribution to be made by agricultural educators in providing training in agricultural occupations may vary from small to 100 percent of the total training program. Some of the occupations for which agricultural educators may assist in providing training may be claimed by distributive education, business education, or industrial education. No attempt to take these fields from their claimants is implied. There is only a desire to delineate them, indicate training needs, and suggest cooperative programs to which all will be able to contribute.

Agricultural education will be greatly handicapped if it undertakes to provide programs without the assistance of colleagues in the other vocational education services.

8. *Working with labor and the Employment Security Office and other governmental agencies.*—Many people conducting new programs will have their first contacts with organized labor, whose cooperation in some places will be imperative. It will be necessary to learn the requirements for admission to the relevant unions. Arrangements can sometimes be made whereby school training is substituted in part for apprenticeship. There can be only disappointment when persons are trained for a unionized occupation but cannot gain admission into a union. Teachers of agriculture should prevent such disappointment.

Many in agricultural education do not know about the Employment Security Service. They will need to establish close contact with it in providing education for agricultural occupations. This service is highly cooperative and able to aid them in many ways. It may help in recruiting, testing, and counseling out-of-school prospective students; aid in planning programs; secure part-time occupational experience for students in training; and assist in placement when the training is completed. The good-will and support of this agency will aid materially in providing effective programs. Cooperation with it is mandatory in schools receiving federal funds for vocational education.

Certain laws that govern the employment of young workers must be observed. These are important in providing occupational experience while students are in training. The laws and rulings to be observed vary from state to state.

9. *Developing programs in cooperation with employers and organizations.*—Experience in providing education for agricultural occupations indicates the necessity for working closely with the prospective employers of those who will be trained and with organizations of employers. Likewise, there is the need for working with businesses that will provide occupational experience on a seasonal basis but that may not be in the market for additional employees. Many area, state, and national trade associations have indicated their need for better-trained workers. They have helped to initiate and guide programs and recruit students.

Perhaps, one of the best possible approaches to employers in agricultural businesses may be to provide short courses useful to them and their employees on an off-season basis, similar to the present young- and adult-farmer programs. Providing them with this type of service will likely be one of the best ways to increase their confidence in one- or two-year programs for prospective employees, which may be offered in high schools or area schools. The cooperation of employers is needed in providing work experience for students during their training periods, which will frequently lead to permanent employment.

10. *Selling the program, recruiting, screening, and counseling students.*—When a program is conceived and plans are made to implement it, there is still the "selling job" to do. The program will need to be sold to parents and prospective students. At the same time the program will need to be sold to employers. In some cases this will be easy; in others it will be difficult.

Securing (or having) enough students so that training costs per person will be reasonable and selecting students who are likely to succeed in the training program and later on the job are serious problems seldom faced in providing the older types of vocational education in agriculture.

Recruitment may be difficult for programs offered at area schools because the program is new. It will become easier as individuals are trained and satisfactorily placed. After programs get going, successful programs will sell themselves. Therefore, success in the first attempts is exceedingly important—success from the standpoint of the students, the teacher, the parents, the school, and the cooperating employers. Recruitment will be aided and enhanced if:

1. The program is supported by a related trade or business association.
2. There is adequate vocational counseling.
3. An area school has a representative who works with local schools in the area.
4. Part-time employment in business is available to provide occupational experience and assist in meeting one's expenses.
5. The school has a program of financial aid for needy students. (There are new opportunities to provide this aid with funds available under the 1963 Vocational Education Act and the National Economics Opportunity Act.)

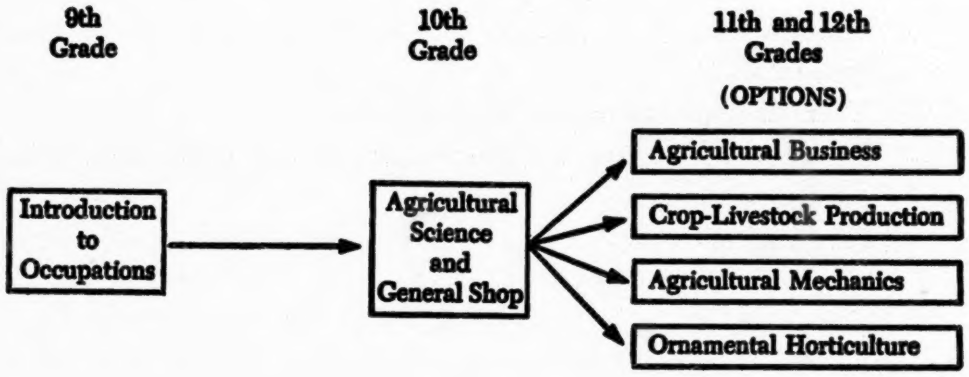
High-school students admitted to 11th and 12th grade programs in agricultural power and machinery, agricultural-supply business, ornamental horticulture, and like fields should be those who are seriously preparing for work in them on graduation or who desire further study in area schools or colleges of agriculture. Tryouts in two or three programs may be necessary before some students find the one in which they can succeed. Students who have no aptitude for any of the programs available should not be retained.

At the post-high-school level many who show interest in training in agricultural occupations will be considerably older than the high-school students with whom agricultural teachers usually work. Some will have had considerable experience since leaving school, much of it unsuccessful. The average age of an entering group of full-time students in a post-high-school program is likely to be 25 to 30 years or more. Their school records shed light on their capabilities, but they are not conclusive. Tests of various kinds, employment records, and intensive personal interviews are needed in choosing those who will be trained.

11. *Programs in vocational agriculture.*—What shall be the program at the high-school level? This question keeps running through the minds of teachers. What program will meet the needs of my students and prepare them for gainful employment. These are baffling problems. There is no easy solution to them or the profession would already have it.

On the pages that follow are some broad concepts of programs at the high-school level which are proposed throughout the country. Program A is an organization suggested by one state.

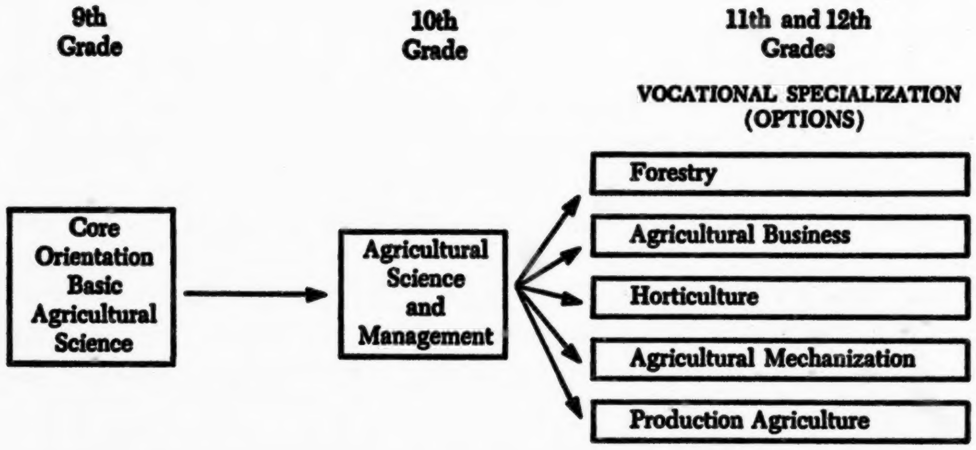
PROGRAM A


9th Grade
10th Grade
11th and 12th Grades
(OPTIONS)
Introduction to Occupations
Agricultural Science and General Shop
Agricultural Business
Crop-Livestock Production
Agricultural Mechanics
Ornamental Horticulture

This organization has certain limitations. It is implied that the first year is primarily an introduction to agricultural occupations with little or no time spent in dealing with the animal or plant sciences and no supervised practice in farming or other kinds of practice in agriculture.

Program B is another organization.

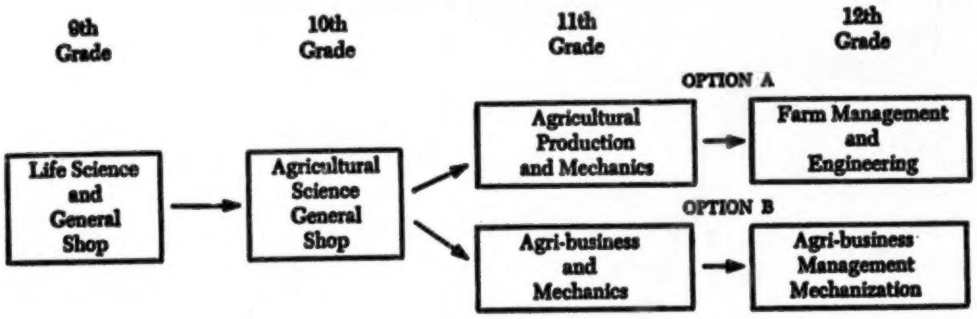
PROGRAM B


9th Grade
10th Grade
11th and 12th Grades
VOCATIONAL SPECIALIZATION (OPTIONS)
Core Orientation Basic Agricultural Science
Agricultural Science and Management
Forestry
Agricultural Business
Horticulture
Agricultural Mechanization
Production Agriculture

This program implies supervised practice in agriculture either in farming or through field or laboratory work to get the participating experience in the agriculture to be learned. It places "management" in the sophomore year which seems too early for 15-year old students. Students of this age are not likely to benefit much from instruction in farm management. Likewise, it will be difficult to provide five different options through the 11th and 12th grades in most high schools.

Here is a third program suggested by another state.

PROGRAM C

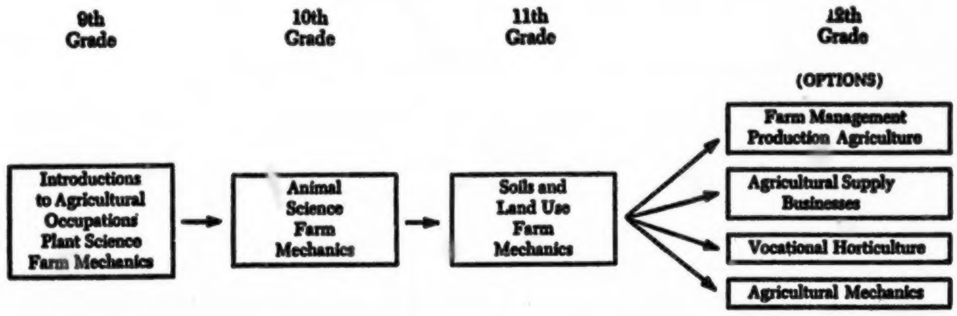

9th Grade
10th Grade
11th Grade
12th Grade
OPTION A
OPTION B
Life Science and General Shop
Agricultural Science General Shop
Agricultural Production and Mechanics
Farm Management and Engineering
Agri-business and Mechanics
Agri-business Management Mechanization

This, like the first, leaves out the plant and animal science in the first year. It also implies leaving out the first year of supervised practice in farming and other forms of supervised occupational experience in agriculture.

In all three programs "specialization" starts in the junior year. This is too early for the great majority of high-school students. The students are not mature enough; some will not be mature enough to profit from specialization even in the senior year. Likewise, teachers of agriculture will have difficulty in getting junior boys placed for occupational experience in agricultural businesses and agencies.

Program D offers a possibility in a multiple-teacher department.

PROGRAM D


9th Grade
10th Grade
11th Grade
12th Grade
(OPTIONS)
Introductions to Agricultural Occupations Plant Science Farm Mechanics
Animal Science Farm Mechanics
Soils and Land Use Farm Mechanics
Farm Management Production Agriculture
Agricultural Supply Businesses
Vocational Horticulture
Agricultural Mechanics

There follow three lists of units of instruction (or modules) which might be used in different courses of study in agricultural occupations in the senior year.

Agricultural-Supply Businesses—Sales and Service

—Career Opportunities in Agricultural Sales and Services
—Orientation to the Training Program
—Human Relations and Personality Traits
—Salesmanship and Selling
—Organization and Functions of Agricultural Businesses
—Business Procedures
—Agricultural Mathematics
—Merchandising Feed
—Merchandising Seed
—Merchandising Fertilizers
—Merchandising Agricultural Chemicals
—Small Engines and Equipment

Vocational Horticulture—Sales and Service

—Career Opportunities in Horticulture
—Orientation to the Training Program
—Human Relations and Personality Traits
—Identifying Horticultural Plants
—Propagating Horticultural Plants
—Growing Horticultural Plants
—Using Soil and Other Plant-growing Media
—Controlling Pests
—Constructing, Maintaining, and Using Plant-growing Structures
—Salesmanship and Selling
—Establishing and Caring for Lawns and Turfs
—Small Engines and Equipment
—Using and Caring for Ornamental Plant Materials and Landscape Structures
—Agricultural Mathematics

Agricultural Mechanics—Sales and Service

—Career Opportunities in Agricultural Machinery
—Orientation to the Training Program
—Human Relations and Personality Traits
—Salesmanship and Selling
—Agricultural Mathematics
—Agricultural Machinery Business Organization and Management
—Service Department Operating Procedures
—Parts Department Operating Procedures
—Welding
—Farm Machinery Assembly—Adjustment

- Maintenance and repair of:
    - Soil-tillage Machinery
    - Crop-planting Machinery
    - Forage-harvesting Machinery
    - Grain-harvesting Machinery
- Small Engines and Equipment
- Tractor Tune-up and Maintenance
- Tractor Engine Systems (gasoline)
- Tractor Engine Overhaul (gasoline)

An all-important question comes to the teachers in single-teacher departments: Can I do anything about providing training in specialized agricultural occupations at the same time I am preparing some boys for farming? If the teacher has enough boys to divide his class into two groups, the answer is an easy "yes." If this is not possible, what can be done? The answer is not easy, but there is a possibility with careful planning and adequate organization on the part of the teacher. Look at the senior year, assuming that all boys have had the regular three-year offerings in vocational agriculture.

Are there some units of instruction which can be helpful to senior boys regardless of whether they will farm or plan to become an employee in an agricultural-supply business—sales and service? How about these units?:

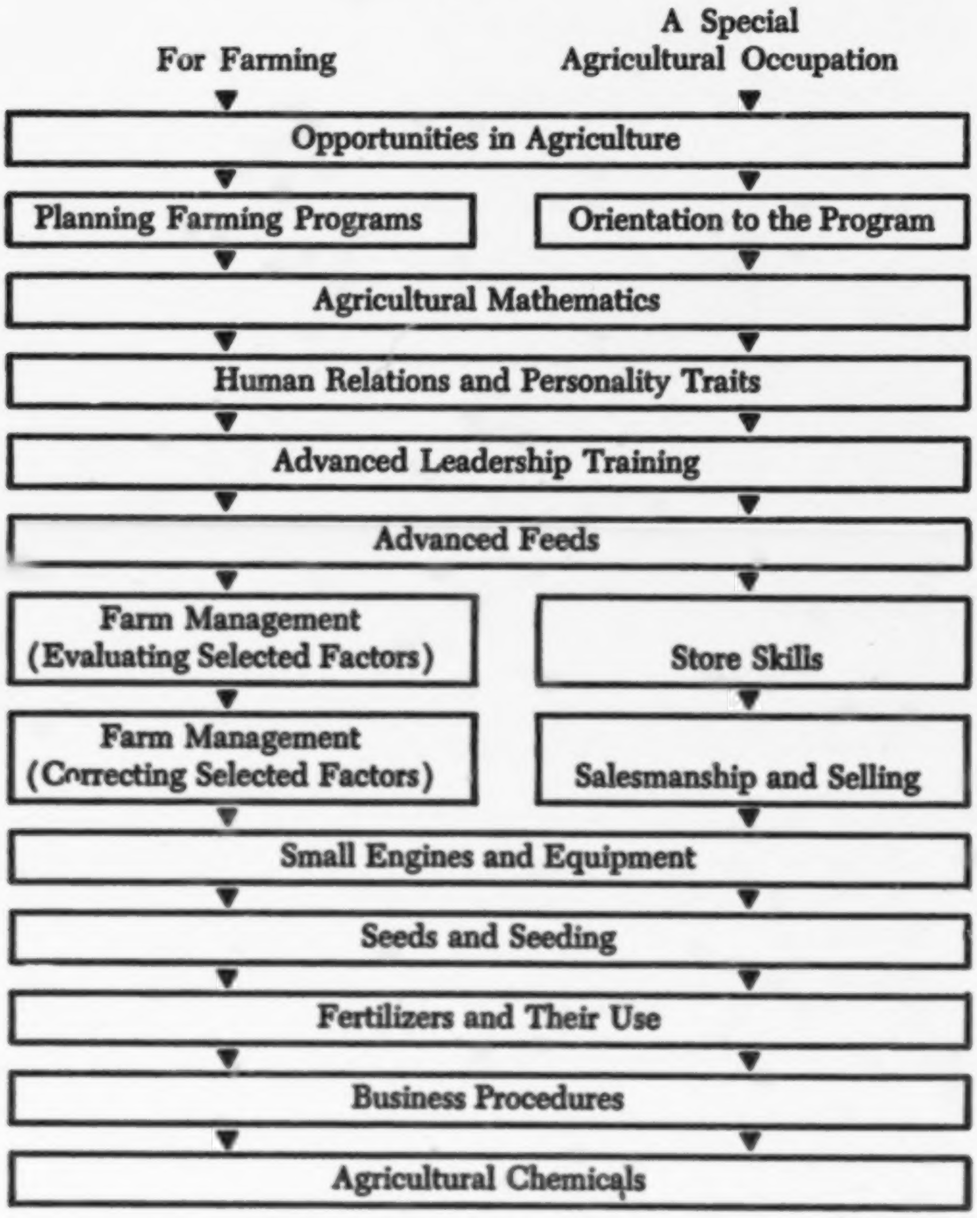
- Opportunities in Agriculture
- Orientation to Program of Instruction for the Year
- Human Relations and Personality Traits
- Agricultural Mathematics
- Small Engines and Equipment
- Business Procedures
- Advanced Leadership Training
- Feeds
- Seeds
- Fertilizers
- Agricultural Chemicals

The following chart illustrates a possibility of providing a course of instruction which will meet, to a large extent, the training needs of young men going into farming and of those going into a specialized agricultural occupation. The two groups could be in the class together during the year except for three units. When the three units are dealt with, the teacher could meet with one group at a different period in the day. With all senior boys scheduling agriculture the

4th period and study hall or library the 5th period (or any such arrangement), the split class could be handled.

PROGRAM IN VOCATIONAL AGRICULTURE

(Twelfth-grade students preparing for farming and a special agricultural occupation in the same class)


For Farming
A Special Agricultural Occupation
Opportunities in Agriculture
Planning Farming Programs
Orientation to the Program
Agricultural Mathematics
Human Relations and Personality Traits
Advanced Leadership Training
Advanced Feeds
Farm Management (Evaluating Selected Factors)
Store Skills
Farm Management (Correcting Selected Factors)
Salesmanship and Selling
Small Engines and Equipment
Seeds and Seeding
Fertilizers and Their Use
Business Procedures
Agricultural Chemicals

12. *Flexible scheduling.–First*, in what agricultural-supply businesses will the boys be placed for supervised occupational experience? After placement, the supervised work experience should be scheduled

at the convenience of the employer-cooperator—scheduled at time when "business is going" and when he can make effective use of the student as an employee. In many states this will come after Christmas during the school year. The blocks of time for work should be 3 to 4 hours long. *Second* this means scheduling the classes at school for the students involved in the mornings or afternoons. This needs to be planned well ahead of the time, before students' schedules are made out for the year, perhaps in April for the coming year.

The *third* aspect of scheduling has to do with field and laboratory experiences that may be provided at the school. In a course in agricultural mechanics where there is a lot of work in the farm mechanics laboratory, the supervised work experience may be provided at the school. Where there is much work in the farm mechanics laboratory, including the assembly and adjustment of new machinery, a two-hour period is a minimum.

13. *Updating one's qualifications in an agricultural occupation.*—Teachers must know well what they are to teach. Of course, there are short courses and much individual reading that can be of help to them. In addition, teachers should not overlook the possibility of working in one or more agricultural businesses to learn firsthand what the competencies are for successful employment. Doing this several times and taking detailed notes will develop a keener insight into training tasks that are challenging vocational agriculture today.

V

GUIDELINES FOR DEVELOPING PROGRAMS IN AGRICULTURAL OCCUPATIONS

Guidelines are needed to keep "in the ball park" people who plan and develop programs and to prevent them from starting programs with poor plans. Programs that are to provide training in agricultural occupations must be vocationally sound and must be of high quality. Precautions must be taken to assure success in the new programs that are launched.

In a sense, the twenty-one guidelines suggested here are steps (in procedure) for developing programs in agricultural occupations. There is some overlapping in the list.

1. *Keep in mind the pattern of instruction in vocational education.* —The pattern of instruction is class work and directed or supervised practice in the agriculture dealt with in class. This must not be forgotten. If the training is in farming, there is to be supervised practice in farming. If the training is in a special agricultural occupation, there must be instruction and supervised practice in the agricultural occupation. Vocational agriculture has accepted the challenge of getting theory and practice experienced together. Getting theory and practice experienced together will make for quality in the programs in agricultural occupations.

2. *Become familiar with established programs.*—There are many kinds and types of programs throughout the country that have been going for a year or two. The more common ones are in such areas as: agricultural supplies—sales and service, farm power and equipment —service and repair, and vocational horticulture. Programs that have possibilities in a school should be examined for content of course of study, organization, and kind and quality of supervised occupational experience. If at all possible, after a teacher has decided to start a particular program, he should make arrangements to take some specialized training for the work he is to do.

3. *Discuss training programs with school administrators.*—The teacher should discuss in detail with his school administrators the possibilities of initiating a training program in agricultural occupations. He should take a careful look at the requirements for a

quality program. He should analyze with the school administrators the possibilities for providing training stations for supervised occupational experience. They should be clear on the equipment and instructional materials required and the costs. In addition, the teacher and school administrators should: 1) discuss the need for getting other school people and lay people to take part in the planning, 2) be clear on local studies or surveys to be made, 3) the understandings to be developed in the parents, students, business concerns, and lay people, and 4) be clear on the standards to be held to in the program.

4. *Have school administration appoint a steering committee.*—A steering committee appointed by school administrators is an effective way of getting other school people involved in the program, which will develop an understanding of and support for the program. Very little has been done in most states in this area of public relations. Who should be on such a committee? Here are a few suggestions: a teacher of general mathematics, an English teacher, a teacher from each of the other vocational services such as home economics, distributive education, and business education. When these people have a part in planning the program, support is built for students' being away from school during school hours for supervised occupational experience. Also, it can help clear up why the agriculture teacher may be away from school during the day.

5. *Determine the job opportunities and training possibilities.*—In one way or another the job opportunities and training possibilities should be determined well ahead of launching a training program in agricultural occupations. The findings from such a study of the community (or larger area) can have a definite bearing on the type and quality of the training program. Who should develop the survey instrument and conduct the survey? Perhaps the steering committee should be in on developing the instrument. Also most, if not all, of the male vocational teachers should have a part in making the survey. All teachers of agriculture in the department should help. The program should be a program of the school, not of one teacher. A good carefully conducted survey will provide many useful and interesting facts for program planning.

6. *Determine the competencies needed by employees.*—This is an important decision for the teacher to make. It must be in terms of the kinds of occupational experiences the students can get in the patronage area of the school through field, laboratory work, or in agricultural businesses. There are many published studies which can provide the teacher help in determining the significant competencies to be

developed in a given type of program. There are two other possibilities to help "round out" and support the list of competencies. *First,* the teacher should visit several businesses of the type he has in mind to train workers for, sit down with the manager or the assistant manager and explain what he has in mind. Ask him what jobs a given man does in the business. Take notes. Then ask him what things he would like the employee to do in the business which he cannot now do (or do well). Making this kind of inquiry in a half dozen businesses will provide the teacher with much helpful information. *Second,* the teacher should go to four or five places of businesses, perhaps in another town, during a busy season and ask each manager if he may observe his employees work. Make clear to him the purpose. Observe two or three employees in each business for a half day, take detailed notes of what they do and say. This will provide the teacher with many ideas of the competencies needed for course building.

7. *Appoint an advisory committee.*—Before an advisory committee is appointed, the teacher(s) should be clear on what uses can be made of such a group. Some of the things an advisory committee can assist the teacher and the school with in developing programs in agricultural occupations are:

—Determine the kinds of training needed in the community or areas
—Evaluate the kind and amount of occupational experience to provide
—Assist in developing an understanding of the program
—Enlist support of the community or area
—Secure training stations
—Assist in recruiting students and placing graduates
—Reflect public reactions to program
—Evaluate curriculum proposals

Who should be on the local advisory committee? The committee should consist of 9 to 12 people representing farmers, the agricultural businesses to be served, other agricultural businesses, farm organizations, farm representative of TV or radio station, and perhaps other civic minded persons interested in the over-all agriculture of the community or area. Professional people such as teachers, school principals, SCS men, and county agricultural agents should not serve on the advisory committee but should be used as consultants when their services are needed.

8. *Set aside enough teacher time to do the job.*—Setting aside enough teacher time to plan and carry out a new-type of program in

vocational agriculture may be difficult. However, it is necessary if these programs are to have a sound instructional basis and the quality they should possess. It will take time for the teacher to develop his course of study, to develop the training stations with their memorandums of understanding, and to make his day-to-day preparation to teach the class in this new field. All people that have a part in developing a program in agricultural occupations should exert their influence to see that the teacher is provided enough time to do the job well.

9. *Determine the course of study.*—The National Center for Vocational and Technical Education at Ohio State University is developing units of instruction for several courses of study, including these: Agricultural Supply—Sales and Service, Farm Power and Machinery—Sales and Service, and Vocational Horticulture. Each of the courses of study contains 10 to 15 units (or modules) of instruction. The units can be dealt with as they are set up in the courses, or the teacher can take three units from one, four units from a second, and six from a third, and "tailor make" a course of study to meet the needs of his particular groups of students. The competencies determined earlier by the teacher through his search of published studies, his personal interviews with managers and others, and his observation of workers in agricultural businesses will provide him sound cues as to the units he should include in his course.

10. *Select the students.*—Perhaps in some schools selecting students will not be a problem. However, a few considerations should be given attention. If students are to work in an agricultural business for their supervised occupational experience, the teacher must take the necessary action to assure successful experience in each. Not all students have the capacity to work in an agricultural-supply store. There are also students whose parents cannot or will not provide the necessary transportation for them to go to and from their work stations. Students should be selected for work experience who have time to do this type of work and also to keep up with their other studies in school. Selecting students and then developing individual class schedules around the work schedules requires detailed effort on the part of the teacher. To the extent possible, class and work schedules should be worked out in April for the school year ahead.

11. *Develop understanding on the part of parents.*—Programs in agricultural occupations are departures from the on-going ones. Many of them will require supervised occupational experience away from the school and home. They will require work by the boys

at a time of the year and at hours of the day which are convenient to the employing cooperators. This will be new to parents. If parents understand how the training program is set up, how it is to operate, the need for supervised experience in the occupation, and why the work experience must be at the convenience of the cooperators, they are likely to cooperate or let the teacher know why they cannot cooperate. With parent understanding, cooperation is likely to exist. Without understanding, there is no basis for cooperation.

12. *Develop instruments for evaluation.*—Before the teacher launches a new program, he should decide what initial evaluations to make, what evaluations to make during the program, and what evaluations to make at the end of the program. A few suggestions here: perhaps the teacher will want to develop certain pre-tests to give before he starts on each unit of instruction. The pre-tests may be pencil and paper or performance tests. The teacher will want to consider similar tests to give his students at the end of each unit of instruction to determine what the students have learned as a result of his teaching.

When boys are placed for occupational experience in agricultural businesses, the teacher will want to develop evaluation instruments to be used by the employers early, during, and at the end of the training program. Perhaps both the employer and the teacher will want to make evaluations of each student at these times and make them separately. The same evaluation instrument may be used by both the employer and the teacher.

13. *Arrange for the necessary training stations.*—For each student enrolled in a course in agricultural occupations there should be a training station suitable for the type of training being provided in the class. Much of what has been said earlier applies here. The time of the year and the hours of work during the day should be worked out at the convenience of the employer—when the employer can make effective use of the student in his business. The teacher will need to be clear on the labor laws for employment, including age and wage rate for students in learning situations. Employers will want and expect teacher help on these matters. A meeting of cooperators with the teacher and the people of the Labor Department will be helpful in clearing up these points. Responsibilities and requirements must be made clear to the employers without too much delay or hesitation and with genuine enthusiasm by the teacher, or the employers will become weary in the delay of clearing up the uncertainties.

14. *Develop understanding on part of cooperators.*—Developing understanding may not be easy and cannot be done all at one time. At first, the teacher is interested in getting the employer to agree to employ the student on a part-time basis and to provide experiences for the boy in as many phases of the business operation as possible. At the beginning the cooperator may be somewhat limited in his vision of what the boy is capable of doing. To enlarge his vision, the teacher will want to provide the employer a copy of the course of study (in broad outline) and brief copies of the units of instruction and the learnings to be secured. Many of these things may have to do with store skills. The teacher will want the cooperator to provide the student with increasing experiences and responsibilities as he develops and shows interest.

As a part of the teacher's on-the-job supervision he should identify activities in which the student can be guided to take the initiative. Likewise, he will be able to suggest to the employer additional experiences and responsibilities which he may make available to the student. At the end of the first successful year of working with a cooperator the teacher should be able to move toward developing a training station which will be highly beneficial to both the students and the cooperator year after year.

15. *Develop memorandums of understanding.*—A memorandum of understanding should involve four parties: the student, the parents, the teacher on behalf of the school, and the cooperating employer. The memorandum should make clear the responsibilities of the four parties involved. It is suggested that the teacher first of all work with the boys in class in developing a clear understanding by them of their responsibilities (to themselves, to the school, to the boys to come later, to their parents, and to the teacher) in the training program. After each student agrees on what he will do (in the memorandum of understanding), the parents should spell out what they agree to do, and then the teacher on behalf of the school. After the first three parties named have stated what they agree to do, the employer should be approached in terms of what he can and will be willing to do in providing occupational experiences in his business.

16. *Study the jobs that students can perform.*—As mentioned earlier, a study of what employees in a business actually do as they work can be helpful to the teacher in determining his training program. Likewise, after students start to work, the teacher can observe his students perform their various jobs. He will be able to pick up many ideas for sharpening his training program and his

individual supervision of students. He should develop a list of jobs performed by students (from the notes he keeps). It can be used as he teaches in the classroom. Not only jobs performed but attitudes, dress, how the student greets or approaches customers, and how he works with his fellow employees are all a part of studying the jobs which students can and will perform.

17. *Decide on the records to be kept.*—This decision involves two parts: records to be kept by the students and records to be kept by the teacher. Records and Plans Book for Supervised Experience in Agriculture, published by the French-Bray Company, seems to be quite adequate for the records in agricultural occupations.

Records to be kept by the teacher on individual students should include such things as occupational objective, scores on standard school tests, scores on vocational tests, record of courses taken, record of supervised occupational experience—place, hours, earnings, and teacher and employer evaluations. The record should include an evaluation of the characteristics of the student when he completes the training programs, including his health habits, hobbies, and the like. As a final part of the permanent record there should be a place for the students' employment and further schooling for the next five years. A Permanent Record Folder published by Interstate meets this need.

18. *Supervise the practice of students.*—Many teachers may feel somewhat helpless at first in this area because of their lack of knowledge. This may be particularly true in the agricultural-supply business—sales and service and in ornamental horticulture. It is natural. At the same time, this means that the teacher must "dig in" and become knowledgeable. Three things mentioned earlier will contribute rapidly to a teacher's ability and confidence to teach and supervise his students in a new area of training. *One:* Take a specialized course to prepare him for the task at hand. *Two:* Observe some efficient and courteous employees in the same type of a business, perhaps in another town. *Three:* Start supervising students early by observing how they work and move about in their jobs. There is no question but that the alert teacher can come up with two or three helpful suggestions for his students on each supervisory visit. The boys will soon develop the feeling that the teacher knows his business.

19. *Keep the public informed.*—Provide the public with complete information of the new program, its purpose, how it is organized, and how it is to be carried out. Give recognition to the steering committee, the advisory committee, the students, parents, and the

cooperators. Recognition can take many forms such as news stories, pictures, and TV, radio, and civic programs dealing with the new aspects of vocational agriculture. Results of the evaluation such as improvement in test scores and performance tests, and employment after completion of training should be made known to the public.

20. *Develop a plan for follow-up of students.*—It will be easy to know what students do the first year or two after completing their training. The teacher needs to decide what kinds of information he desires on his former students for at least five years after completion of the program. These yearly records should include such things as kind of employment, name and location of employer, and additional schooling completed. Perhaps it would be well to get the name and address of a person who will likely know the whereabouts of each student some five years hence. The 1963 Act requires a reporting on students five years following completion of their training.

21. *Set up a timetable for getting program underway.*—If a new program is to "get off the ground" in a distinct and profound manner, the teacher should have a timetable. It will be helpful to the teacher if he will make a list of the "things to do" and then set them up in a sequence for doing, and place at the right of each "thing to do" a "by this date." This procedures will go a long way toward preventing the teacher from omitting something important from his plan or letting something slip. In addition, it will give the teacher enthusiasm and confidence because as he accomplishes each step in a detailed plan, he will be taking the necessary actions to assure a successful operation. Success is a must as vocational agriculture launches new programs. And, success is not possible without careful planning.

VI

A TIMETABLE FOR SETTING UP AND STARTING A PROGRAM IN AGRICULTURAL OCCUPATIONS

	Things To Do	*By This Date*
1.	State philosophy and criteria for training in agricultural occupations	
2.	Keep record of planning meetings, decisions reached, and important developments in planning	
3.	Become familiar with established programs	
4.	Discuss program possibilities with school administrators	
5.	Discuss program possibilities with men in agricultural business in the area	
6.	Have school administrators appoint a steering committee	
7.	Develop survey forms and survey the job opportunities and training possibilities	
8.	Determine the abilities and competencies needed by workers in the selected area of agricultural occupations	
9.	Select and have appointed a local advisory group	
10.	Set aside enough teacher time to do the job	
11.	Build course of study for the program, including selecting and developing units (modules) of instruction	
12.	Decide on criteria for selecting students and select them	
13.	Develop understanding on part of parents and secure parent approval for students to take the training	

14. Develop instruments for evaluating the students' proficiency at the beginning, during, and at the end of the training program .... ____________
15. Arrange for necessary training stations .... ____________
16. Develop understanding on part of cooperating employers .... ____________
17. Develop memorandum of understanding .... ____________
18. Decide on records to be kept: by students, by the teacher .... ____________
19. Develop a plan for studying and supervising students' occupational experience .... ____________
20. Develop a plan for keeping the public informed .... ____________
21. Develop a plan for placing students after training, and for their follow-up .... ____________